

# New EVR Driver Status

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# Device Setup

- Simple setup for PCI and VME
- DB templates provided for all tested cards

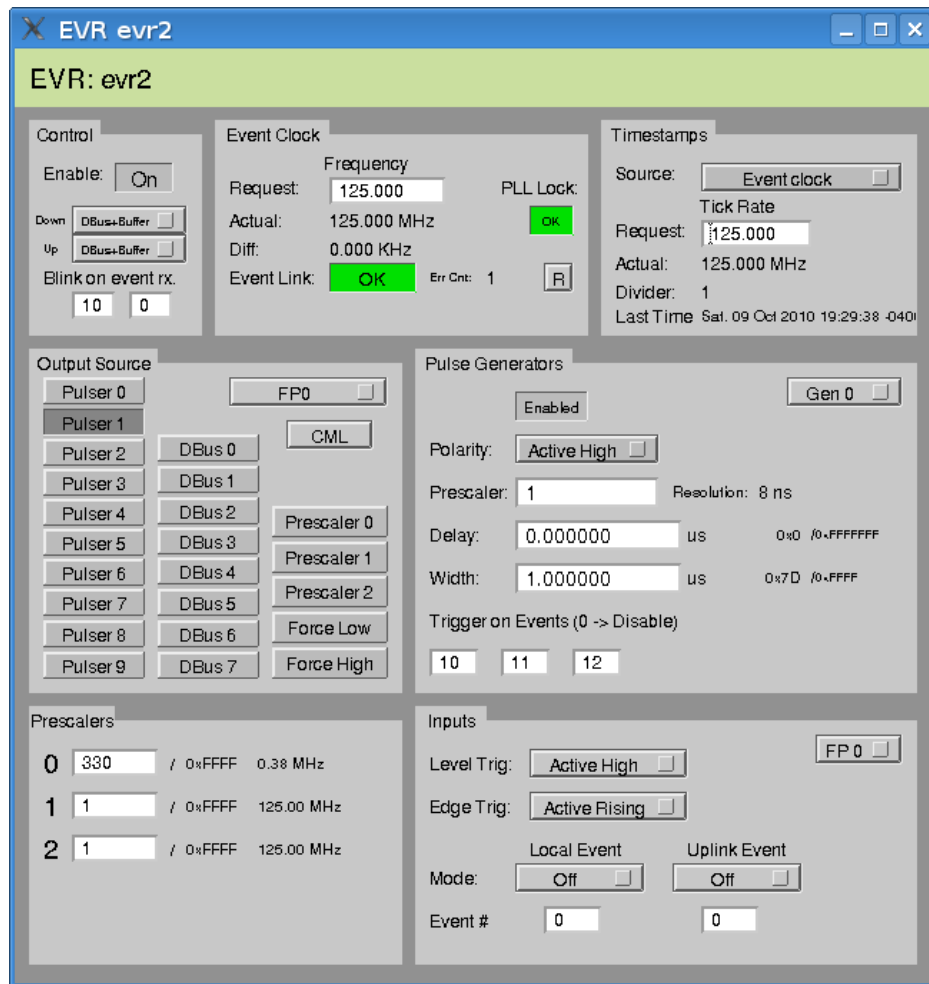
```
mrmEvrSetupPCI(0,1,2,0)
```

```
mrmEvrSetupVME(1,5,0x20000000,3,0x26)
```

```
dbLoadRecords("db/evr-pmc-230.db","P=evr1:,C=0")
```

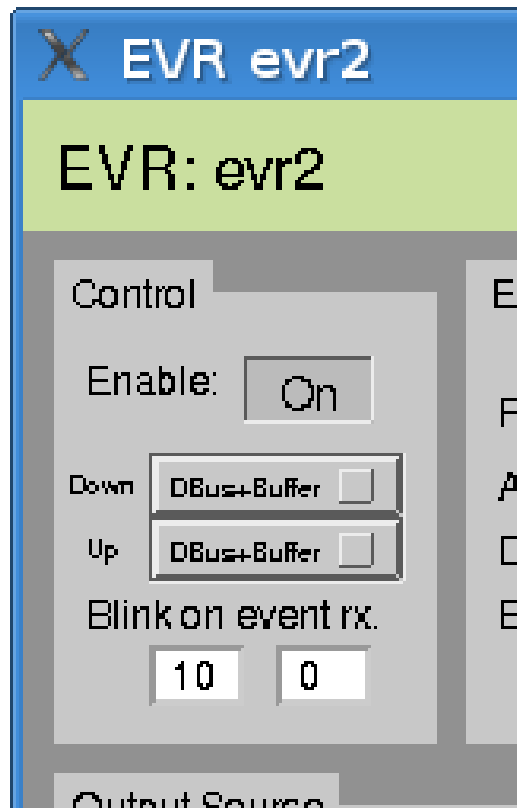
```
dbLoadRecords("db/evr-vmerf-230.db","P=evr2:,C=1")
```

# EVR Expert Displays



- Controls Event link
- Time-stamping
- Output mapping
- Pulse generators
- Prescalers (dividers)
- Local Inputs

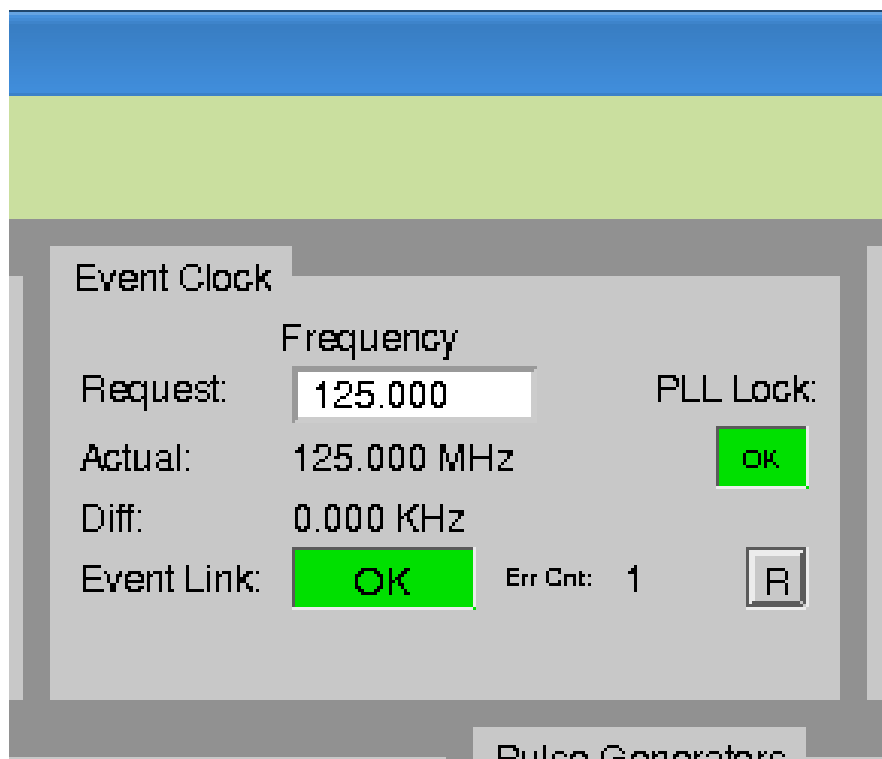
# Device Controls



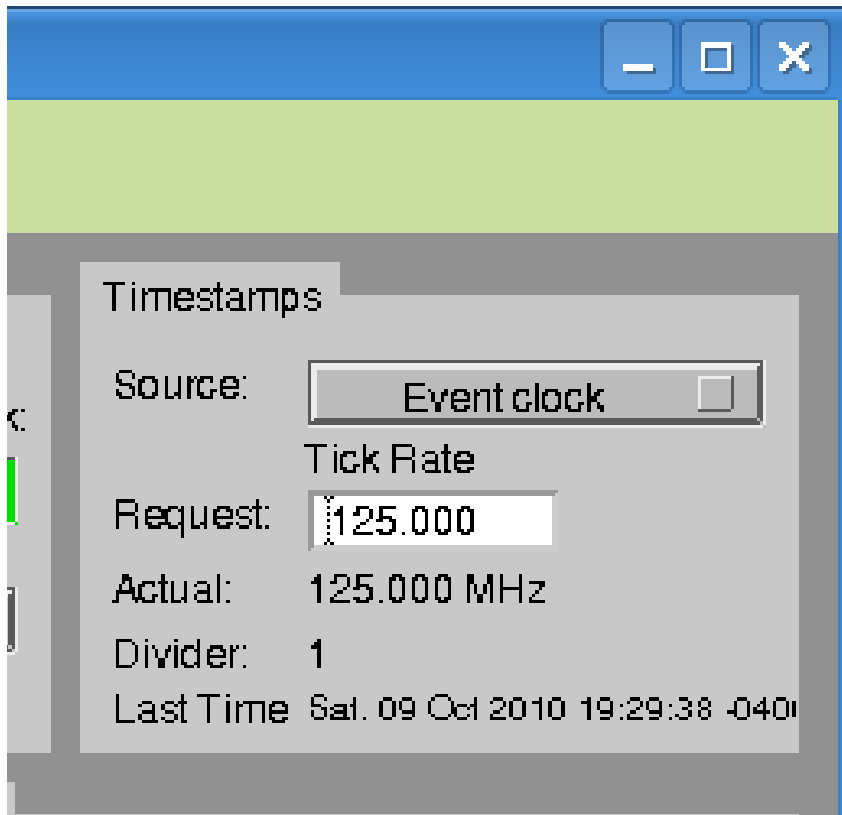
- Master Enable
- Event Link data modes
  - Dbus+Buffer
  - Dbus only
  - Up and down links
- Two LED blink mappings

# Event Clock

- Setting and readback of EVR's local oscillator
- PLL status
- Event Link status

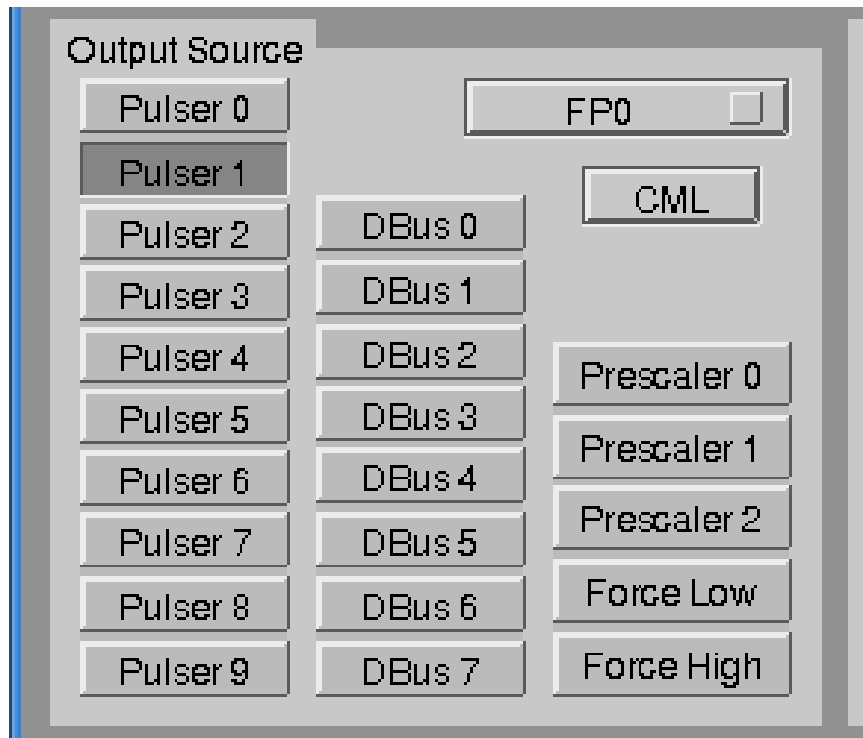


# Timestamp Controls



- Source: Clock, Dbus, or event code
- TS Clock rate
- Current time

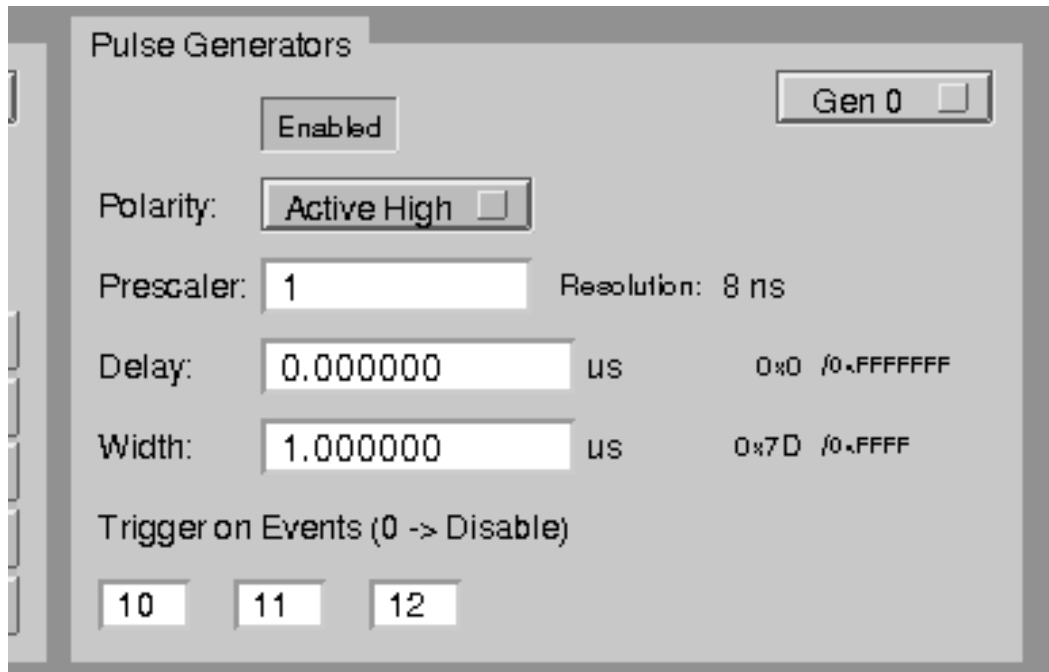
# Output Mapping



- For all outputs
  - CML has more options
- Connect each output to a source

# Pulse Generator

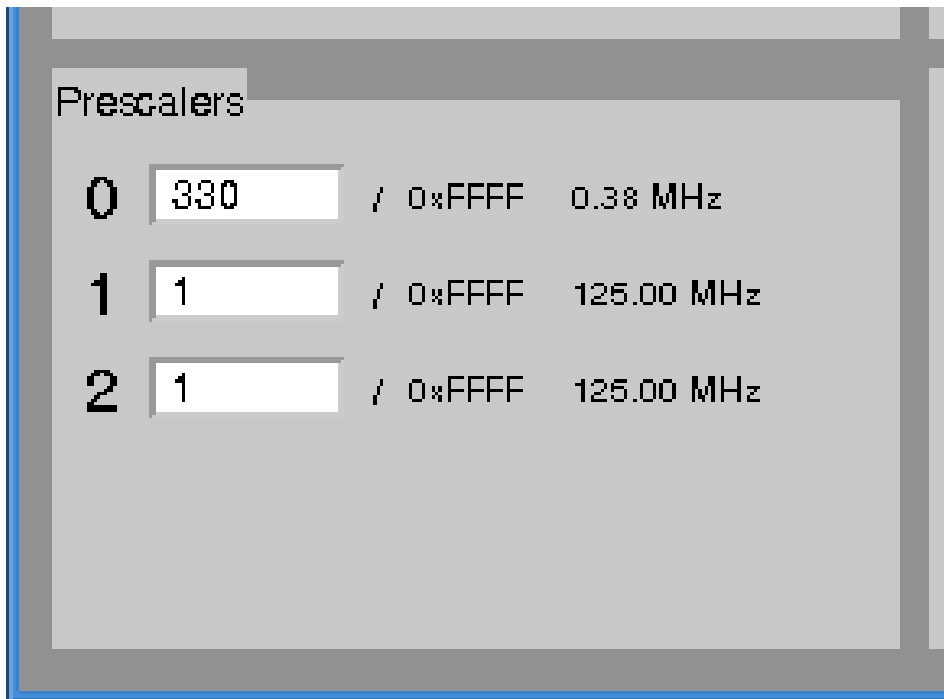
- Controls pulse shape
- Sets mapping(s)
  - Default template gives each PG 3 trigger events.
  - Adding more is easy





# Prescaler

- Integer divider on Event Clock

A screenshot of a software interface titled 'Prescalers'. It displays a table with three rows of settings. Each row has a column for a number (0, 1, 2), a text input field, a column for a hexadecimal value, and a column for a frequency in MHz. The input fields contain the values 330, 1, and 1 respectively. The hexadecimal values are all 0xFFFF, and the frequencies are 0.38 MHz, 125.00 MHz, and 125.00 MHz.

Prescalers			
0	<input type="text" value="330"/>	/ 0xFFFF	0.38 MHz
1	<input type="text" value="1"/>	/ 0xFFFF	125.00 MHz
2	<input type="text" value="1"/>	/ 0xFFFF	125.00 MHz

# Local Inputs

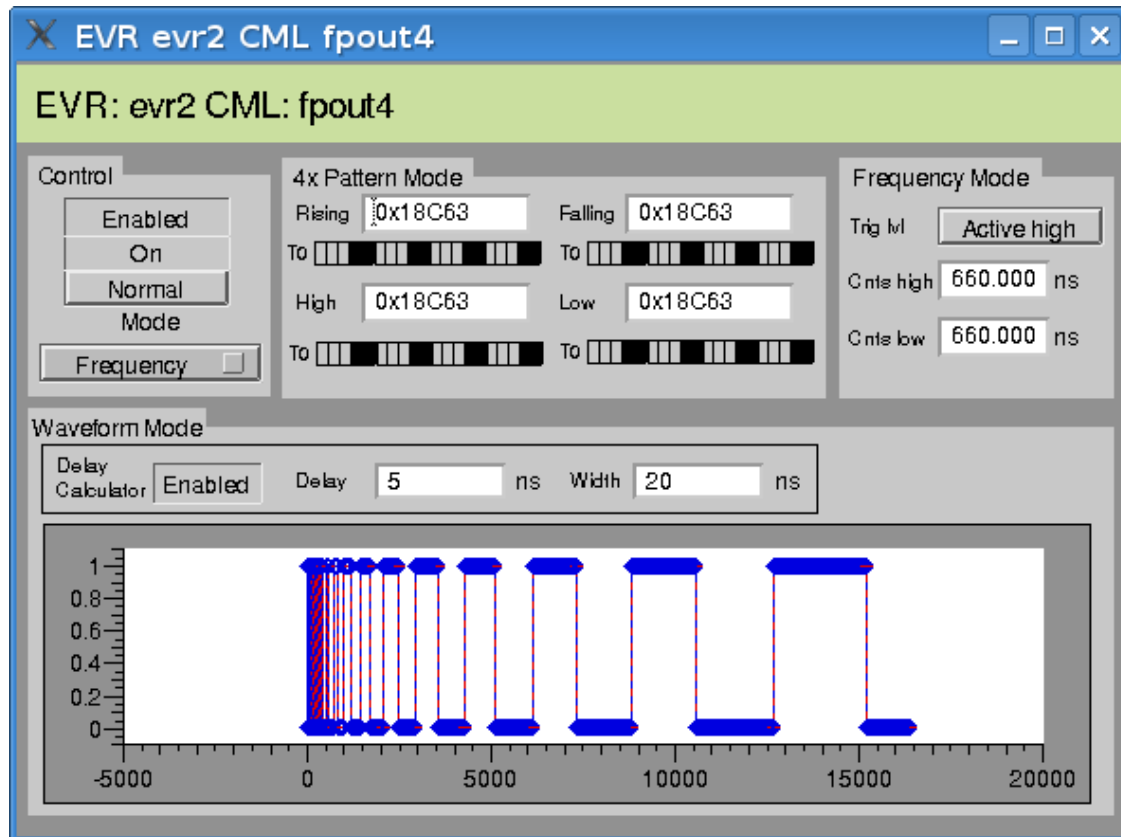
- Each input can send an event+dbus upstream
- Or apply an event locally (trigger or TS)

The screenshot shows a configuration window titled 'Inputs'. It contains several controls for configuring input events:

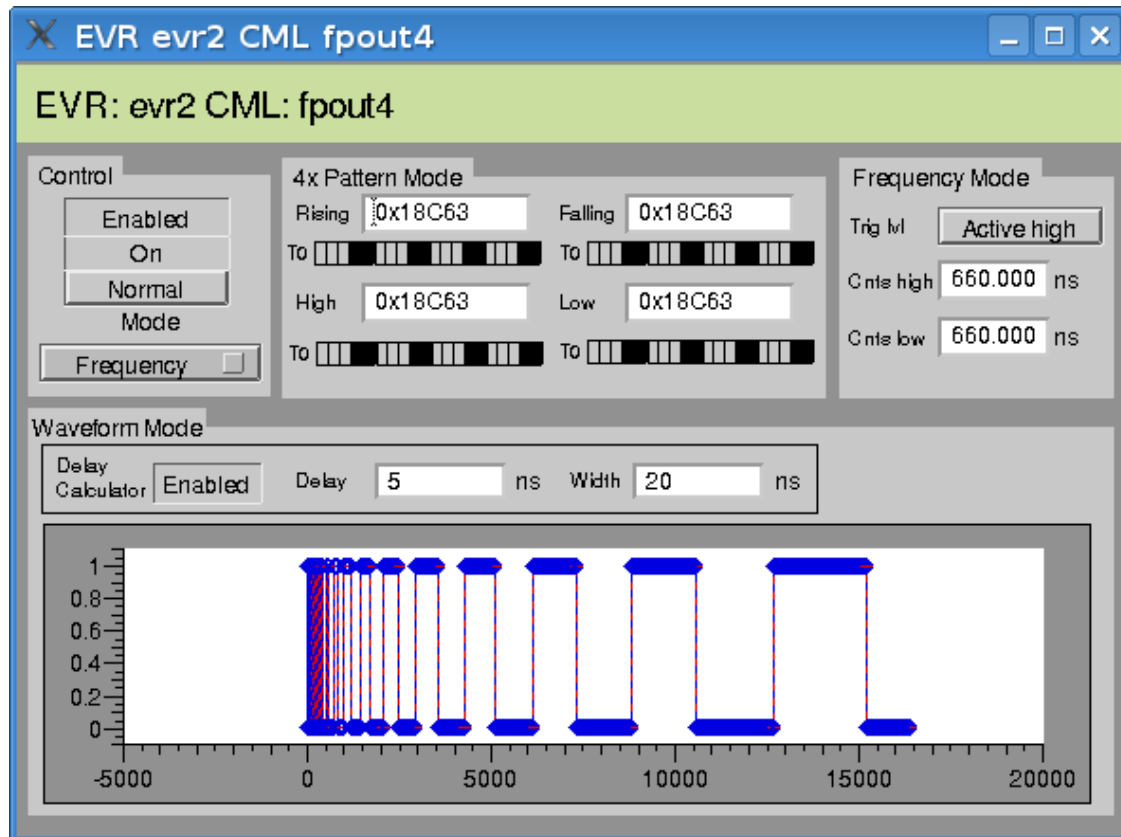
- Level Trig:** A dropdown menu set to 'Active High' with an unchecked checkbox.
- Edge Trig:** A dropdown menu set to 'Active Rising' with an unchecked checkbox.
- FP 0:** A button with an unchecked checkbox.
- Mode:** A label followed by two dropdown menus. The first is labeled 'Local Event' and is set to 'Off'. The second is labeled 'Uplink Event' and is also set to 'Off'. Both have unchecked checkboxes.
- Event #:** Two input fields, one for the 'Local Event' and one for the 'Uplink Event', both containing the value '0'.

# CML

- Faster (400 ps) resolution
- Three mode
  - 4x20 bit Pattern
  - Frequency (new)
  - Waveform (new)
    - 40,940 bit arbitrary pattern



# CML Demo



- NSLSII LINAC has 10 Hz rep rate, length 1.6 $\mu$ s
- MRF EVRTX used to drive E-Gun
- Test updating CML pattern at 10 Hz
- Use Sequencer to update

# Conclusion

- What is missing?